

Serial No. 09/238,995
Express Mail Cert. No. EV 032 104 333 US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Joseph C. Kawan
Application No.: 09/238,995
Filed: January 28, 1999
For: **A METHOD AND SYSTEM FOR CONTACTLESS
INTERFACING FOR SMART CARD BANKING**
Examiner: Akers, G.
Group Art Unit: 2164

Assistant Commissioner for Patents
Box CPA
Washington, DC 20231

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PRELIMINARY AMENDMENT AND REMARKS

Sir:

Applicant submits the following Preliminary Amendment and Remarks as part of the Continued Prosecution Application under 37 C.F.R. § 1.53(d) filed herewith and in reply to the Final Office Action mailed on September 28, 2001.

In the Claims:

Please amend the claims as follows:

1. (Twice Amended) A method of contactless interfacing for a smart card, comprising:

allowing a user to establish a physical ^{separate} contact bi-directional communication interface between a smart card and a hand-held computing device for accessing a smart card application on a microcomputer of the smart card;

allowing the user to enter identifying information and transaction information on the hand-held computing device;

allowing the user to initiate a contactless bi-directional communication interface via the hand-held computing device between the smart card application and a self-service transaction terminal of an on-line system of a financial institution;

verifying the smart card by the on-line system based at least in part on the identifying information received by the on-line system via the contactless communication interface between the hand-held computing device and the self-service transaction terminal; and

communicating the transaction information entered by the user on the hand-held computing device to the self-service transaction terminal of the on-line system via the contactless communication interface.

2. (Amended) The method of claim 1, wherein the contactless communication interface further comprises an infrared communication interface.

3. (Amended) The method of claim 1, wherein the contactless communication interface further comprises a wireless communication interface.

4. (Amended) The method of claim 3, wherein the wireless communication interface further comprises a radio frequency communication interface.

5. (Amended) The method of claim 4, wherein the radio frequency communication interface further comprises a proximity communication interface.

Cancel claims 6 and 7, without prejudice.

8. (Amended) The method of claim 1, wherein the financial institution further comprises a bank.

Please cancel claim 9, without prejudice.

10. (Amended) The method of claim 1, wherein allowing the user to initiate the contactless communication interface between the smart card application and the self-service transaction terminal further comprises allowing the user to initiate the contactless communication interface through a contactless communication transceiver of the terminal.

11. (Amended) The method of claim 10, wherein allowing the user to initiate the contactless communication interface between the smart card application and the self-service transaction terminal further comprises allowing the user to initiate the contactless communication interface through an infrared transceiver of the terminal.

12. (Amended) The method of claim 1, wherein the self-service transaction terminal further comprises an automated teller machine.

13. (Amended) The method of claim 1, wherein the self-service transaction terminal further comprises a personal computer.

14. (Amended) The method of claim 1, wherein the self-service transaction terminal further comprises a telephone.

15. (Amended) The method of claim 1, wherein the self-service transaction terminal further comprises a wireless telephone.

16. (Amended) The method of claim 10, wherein allowing the user to initiate the contactless communication interface between the smart card application and the self-service transaction terminal further comprises allowing the user to initiate the contactless communication interface through a wireless transceiver of the terminal.

Cancel claims 18-21, without prejudice.

22. (Amended) The method of claim 10, wherein allowing the user to initiate the contactless communication interface between the smart card application and the self-service transaction terminal further comprises allowing the user to initiate the contactless communication interface through a proximity transceiver of the terminal.

Cancel claims 23-26, without prejudice.

27. The method of claim 10, wherein] allowing the user to initiate the contactless communication further comprises allowing the user to initiate the contactless communication between the contactless communication transceiver of the self-service transaction terminal and a contactless communication transceiver of the hand-held computing device comprising a personal data assistant.

Cancel claims 28-31, without prejudice.

39. (Amended) The method of claim 1, wherein verifying the smart card further comprises verifying the smart card by the on-line system based at least in part on the identifying information received by the on-line system via the contactless communication interface between the hand-held computing device comprising a personal data assistant and the self-service transaction terminal.

Please cancel claims 40 and 41, without prejudice.

42. (Amended) The method of claim 1, wherein verifying the smart card further comprises verifying the authenticity of the smart card.

43. (Amended) The method of claim 1, wherein verifying the smart card further comprises checking security information for the user.

48. (Amended) The method of claim 47, wherein receiving the security information further comprises receiving the security information through an input/output device of the hand-held computing device comprising a personal data assistant.

Cancel claims 51-54, without prejudice.

55. (Amended) The method of claim 1, wherein allowing the user to enter the transaction information further comprises receiving the information through an input/output device.

56. (Amended) The method of claim 55, wherein receiving the information further comprises receiving the information through the input/output device of the hand-held computing device comprising a personal data assistant.

Cancel claims 59-62, without prejudice.

63. (Twice Amended) A contactless interface system for a smart card, comprising:

a self-service transaction terminal of an on-line system of a financial institution;

a hand-held computing device capable of establishing a physical contact bi-directional communication interface with the smart card for accessing a smart card application on a microcomputer of the smart card;

wherein the hand-held computing device has an input device for receiving identifying information and transaction information entered by a user;

wherein the hand-held computing device is capable of initiating a contactless bi-directional communication interface between the smart card application and the self-service transaction terminal of the on-line system via the hand-held computing device;

wherein the on-line system is capable of verifying the smart card via identification information received by the on-line system via the contactless communication interface between the hand-held computing device and the self-service transaction terminal; and

wherein the hand-held computing device is capable of communicating the transaction information to the on-line system via the contactless communication interface between the hand-held computing device and the self-service transaction terminal.

64. (Amended) The system of claim 63, wherein the hand-held computing device further comprises an infrared interface communication device.

65. (Amended) The system of claim 63, wherein the hand-held computing device further comprises a wireless interface communication device.

66. (Amended) The system of claim 63, wherein the hand-held computing device further comprises a radio frequency interface communication device.

Cancel claims 67 and 68, without prejudice.

69. (Amended) The system of claim 63, wherein the self-service transaction terminal comprises an automated teller machine.

70. (Amended) The system of claim 63, wherein the self-service transaction terminal comprises a personal computer.

71. (Amended) The system of claim 63, wherein the self-service transaction terminal comprises a telephone.

73. (Amended) The system of claim 63, wherein the hand-held computing device comprises a personal data assistant.

Cancel claims 75-78, without prejudice.

REMARKS

Claims 1-31, 33 and 39-81 are pending in the application. Claims 1-31, 33 and 39-81 stand rejected under 35 U.S.C. 103(a).

Claim Amendments

The foregoing amendment clarifies the expression of the invention. Support for the amendment is found throughout the specification and in the original and amended claims as detailed below. Accordingly, no new matter has been added. Independent claims 1 and 63 are amended to focus, for example, on the method and system of contactless interfacing for a smart card, in which the user is allowed to establish a physical contact bi-directional communication interface between the smart card and a hand-held computing device, such as a PDA, and to set up a transaction by entering identifying information and transaction information on the hand-held computing device. Once the physical interface is established, the user is allowed to initiate a contactless bi-directional communication interface via the hand-held computing device between the smart card application and a self-service transaction terminal, such as an ATM, of an on-line system of a financial institution. Upon initiating the contactless communication interface, the smart card is verified by the on-line system based at least in part on the identifying information received by the on-line system via the contactless communication interface. Thereafter, the transaction information entered by the user on the hand-held computing device is communicated to the self-service transaction terminal of the on-line system via the contactless communication interface. (Spec. p. 8, line 24-p. 9, line 26). In addition, dependent claims 6, 7, 9, 18-21, 23-26, 28-31, 40, 41, 51, 54, 59, 62, 67, 68, and 75-78, the limitations of which are included in other claims, are canceled, and dependent claims 2-5, 8, 10-16, 22, 27, 39, 42, 43, 48, 55, 56, 64-66, and 70-73 are amended to correspond generally to the amendment of claims 1 and 63.

Claim Rejections - 35 USC § 103

Claims 1, 6-10, 15-18, 20-23, 25-28, 30-31, 33, 39-51, 53, 55-59, 61-63, 66-69, 71, 73-76, and 78-81 stand rejected over Fox (U.S. 5,943,624) in view of Claus

(U.S. 5,461,217) and further view of Saitoh (U.S. 5,929,414) under 35 U.S.C. 103(a); claim 5 stands rejected over Fox in view of Claus in view of Saitoh and further view of Jachimowicz (U.S. 5,789,733) under 35 U.S.C. 103(a); claim 13 stands rejected over Fox in view of Claus in view of Jachimowicz and further view of Pitroda (U.S. 5,590,038) under 35 U.S.C. 103(a); claims 2-4, 11-12, 14, and 65-66 stand rejected over Fox in view of Claus and further view of Jachimowicz under 35 U.S.C. 103(a); and claims 19, 24, 29, 52, 54, 60, 70, 72, and 77 stand rejected over Fox in view of Claus and further view of Pitroda under 35 U.S.C. 103(a). The rejection is respectfully traversed and reconsideration is requested. The references asserted do not teach or suggest the claimed invention.

By way of background, according to an embodiment of applicant's claimed method and system of contactless interfacing for a smart card, a smart card user is allowed to access the smart card application by establishing a physical contact communication interface with the smart card by inserting the smart card into a hand-held computing device, such as a PDA that also functions as a card reader. (Spec. p. 3, lines 3-7). The user can then enter identification and transaction information on the hand-held computing device before going to a self-service transaction terminal of a financial institution on-line system, such as an ATM, to perform a transaction. Thus, the user can set up a smart card transaction, such as withdrawing cash, checking account balances, or checking a stock portfolio, on the hand-held computing device in advance before going to the self-service transaction terminal and avoid the necessity, for example, of navigating through an whole series of ATM screens to perform the transaction. (Spec. p. 8, line 24-p. 9, line 12).

After inserting the smart card and entering the identification and transaction information on the hand-held computing device, the user can take the hand-held computing device and smart card to the self-service transaction terminal and initiate a contactless communication interface via the hand-held computing device between the smart card application on the smart card and the self-service transaction terminal using, for example, some or all of the IR emitter/sensors of the matrix of IR emitter/sensors of the ATM touch screen and IR emitter/sensors provided on the hand-held computing device. The on-line system verifies the smart

card based, for example, on the identifying information entered by the user on the hand-held computing device, and the transaction information entered by the user on the hand-held computing device is communicated to the on-line system via the contactless communication interface. (Spec. p. 9, line 13-p. 10, line 14).

These features, recited in independent claims 1 and 63, as well as additional features of the dependent claims, are believed to be clearly patentable over the applied prior art. The above-noted aspects are not disclosed or suggested by the references asserted against the claims of record. Specifically, the asserted references fail to provide key features of the invention, and the claimed invention is patentably distinct from the cited references.

Fox discloses a cell phone (10) that has smart card circuitry and an RF interface (40) for communicating with an external RF reader when in range of the RF reader. After entering a PIN to ensure that the proper person has the cell phone, the user can execute a POS transaction via a merchant's reader or transfer funds via an ATM. (col. 5, lines 13-25). The cell phone (46) can access a bank, via the cell phone infrastructure to download electronic cash onto the cell phone smart card circuitry. (col. 5, lines 35-46). The Fox patent neither teaches nor suggests the method and system of contactless interfacing for a smart card contemplated by applicant's claimed invention.

Claus discloses use of smart cards to transfer electronic money between a bank center and a smart card or between two smart cards, checking a smart card balance, or adding interest to the smart card balance. For example, two users can insert their smart cards (102, 104) into card readers (141, 143) on the same network (106), and the two smart cards exchange handshake information and each sends an electronic security key to the network for comparison to a registered security key. If the comparison is favorable, each smart card is unlocked to participate in the transaction. (col. 4, line 60-col. 5, line 51). Neither does Fox in view of the Claus patent teach or suggest the method and system of contactless interfacing for a smart card contemplated by applicant's claimed invention.

Saitoh discloses smart card with a contact and a transceiver that is usable for both contact and contactless smart card readers (col. 3, line 46-col. 4, line 8) and a smart card reader with a contact and a transceiver that is usable with both

contact and contactless smart cards (col. 6, line 19-col. 7, line 41). Nor does Fox in view of Claus in further view of the Saitoh patent teach or suggest the method and system of contactless interfacing for a smart card contemplated by applicant's claimed invention.

Jachimowicz discloses a smart card (10) with an optical emitter (18)/sensor (16) which the user "waves" in front of an optical reader/transmitter to activate the reader/transmitter to communicate with the card. Neither Fox in view of Claus and further view of Jachimowicz nor Fox in view of Claus in view of Saitoh and further view of Jachimowicz teaches or suggests the method and system of contactless interfacing for a smart card contemplated by applicant's claimed invention.

Pitroda discloses a smart card with a touch-sensitive display (30) that enables a user to select a particular credit card to use for a transaction at a POS terminal (23) for a sales transaction. Likewise, neither Fox in view of Claus and further view of Pitroda nor Fox in view of Claus in view of Jachimowicz and further view of Pitroda teaches or suggests the method and system of contactless interfacing for a smart card contemplated by applicant's claimed invention.

On the contrary, applicant's claimed invention involves, for example, a physical contact interface between the smart card and a hand-held computing device, such as a PDA, on which the user enters identifying and transaction information before initiating a contactless communication interface via the hand-held computing device between the smart card application and a self-service transaction terminal, such as an ATM, of an on-line system of a financial institution. Upon initiating the contactless communication interface, the smart card is verified by the on-line system based at least in part on the identifying information received by the on-line system via the contactless communication interface, and the transaction information entered by the user on the hand-held computing device is communicated to the self-service transaction terminal of the on-line system via the contactless communication interface.

The claimed combinations are not taught or suggested by Fox, Claus, Saitoh, Jachimowicz, or Pitroda either separately or in combination with one another. Fox discloses a cell phone with smart card circuitry; Claus discloses transferring electronic money between two smart cards on a card reader network; Saitoh discloses smart cards usable with both contact and contactless card readers;

Jachimowicz discloses a smart card with an optical interface; and Pitroda discloses a smart card with a touch-sensitive display. The above-noted aspects are not disclosed or suggested by Fox, Claus, Saitoh, Jachimowicz, or Pitroda either separately or in any combination.

Version With Markings to Show Changes Made

Amendments in the Claims:

In accordance with 37 CFR 1.121(c), the following versions of the claims as rewritten by the foregoing amendment show all the changes made relative to the previous versions of the claims.

1. (Twice Amended) A method of contactless interfacing for a smart card, comprising:

[establishing] allowing a user to establish a physical contact communication interface between a smart card and a hand-held computing device for accessing a smart card application on a microcomputer of the smart card;

allowing the user to enter identifying information and transaction information on the hand-held computing device;

[initiating] allowing the user to initiate a contactless communication interface via the hand-held computing device [for a user] between the smart card application and a self-service transaction terminal of an on-line system of a financial institution;

verifying [authorization for the communication for the user] the smart card by the on-line system based at least in part on the identifying information received by the on-line system via the contactless communication interface between the hand-held computing device and the self-service transaction terminal; and

communicating the transaction information [for] entered by the user on the hand-held computing device to the self-service transaction terminal of the on-line system via the contactless communication interface.

2. (Amended) The method of claim 1, wherein [initiating] the contactless communication interface further comprises [initiating] an infrared communication interface.

3. (Amended) The method of claim 1, wherein [initiating] the contactless communication interface further comprises [initiating] a wireless communication interface.

4. (Amended) The method of claim 3, wherein [initiating] the wireless communication interface further comprises [initiating] a radio frequency communication interface.

5. (Amended) The method of claim 4, wherein [initiating] the radio frequency communication interface further comprises [initiating] a proximity communication interface.

Cancel claims 6 and 7, without prejudice.

8. (Amended) The method of claim [7] 1, wherein the financial institution further comprises a bank.

Please cancel claim 9, without prejudice.

10. (Amended) The method of claim [9] 1, wherein [initiating] allowing the user to initiate the contactless communication interface [at] between the smart card application and the self-service transaction terminal further comprises [initiating] allowing the user to initiate the contactless communication interface through a contactless communication transceiver of the terminal.

11. (Amended) The method of claim 10, wherein [initiating] allowing the user to initiate the contactless communication interface between the smart card application and the self-service transaction terminal further comprises [initiating] allowing the user to initiate the contactless communication interface through an infrared transceiver of the terminal.

12. (Amended) The method of claim [11] 1, wherein the self-service transaction terminal further comprises an automated teller machine.

13. (Amended) The method of claim [11] 1, wherein the self-service transaction terminal further comprises a personal computer.

14. (Amended) The method of claim [11] 1, wherein the self-service transaction terminal further comprises a telephone.

15. (Amended) The method of claim [11] 1, wherein the self-service transaction terminal further comprises a wireless telephone.

16. (Amended) The method of claim 10, wherein [initiating] allowing the user to initiate the contactless communication interface between the smart card application and the self-service transaction terminal further comprises [initiating]

allowing the user to initiate the contactless communication interface through a wireless transceiver of the terminal.

Cancel claims 18-21, without prejudice.

22. (Amended) The method of claim 10, wherein [initiating] allowing the user to initiate the contactless communication interface between the smart card application and the self-service transaction terminal further comprises [initiating] allowing the user to initiate the contactless communication interface through a proximity transceiver of the terminal.

Cancel claims 23-26, without prejudice.

27. The method of claim 10, wherein [initiating] allowing the user to initiate the contactless communication further comprises [initiating] allowing the user to initiate the contactless communication between the contactless communication transceiver of the self-service transaction terminal and a contactless communication transceiver of the hand-held computing device comprising a personal data assistant.

Cancel claims 28-31, without prejudice.

39. (Amended) The method of claim 1, wherein verifying the [authorization] smart card further comprises verifying the [authorization] smart card by the on-line system based at least in part on the identifying information received by the on-line system via the contactless communication interface between the hand-held computing device comprising a personal data assistant and the self-service transaction terminal.

Please cancel claims 40 and 41, without prejudice.

42. (Amended) The method of claim 1, wherein verifying the [authorization] smart card further comprises verifying the authenticity of the smart card.

43. (Amended) The method of claim 1, wherein verifying the [authorization] smart card further comprises checking security information for the user.

48. (Amended) The method of claim 47, wherein receiving the security information further comprises receiving the security information through [the] an

input/output device of the hand-held computing device comprising a personal data assistant.

Cancel claims 51-54, without prejudice.

55. (Amended) The method of claim 1, wherein [communicating] allowing the user to enter the transaction information further comprises receiving the information through an input/output device.

56. (Amended) The method of claim 55, wherein receiving the information further comprises receiving the information through the input/output device of the hand-held computing device comprising a personal data assistant.

Cancel claims 59-62, without prejudice.

63. (Twice Amended) A contactless interface system for a smart card, comprising:

a self-service transaction terminal of an on-line system of a financial institution;

[means for] a hand-held computing device capable of establishing a physical contact communication interface with the smart card for accessing a smart card application on a microcomputer of the smart card;

wherein the hand-held computing device has an input device for receiving identifying information and transaction information entered by a user;

[means for] wherein the hand-held computing device is capable of initiating a contactless communication interface between the smart card application and [an] the self-service transaction terminal of the on-line system via the hand-held computing device;

[means associated with the initiating means for] wherein the on-line system is capable of verifying [authorization for the communication] the smart card via identification information received by the on-line system via the contactless communication interface between the hand-held computing device and the self-service transaction terminal; and

[means associated with the verifying means for] wherein the hand-held computing device is capable of communicating the transaction information to the on-line system via the contactless communication interface between the hand-held computing device and the self-service transaction terminal.

64. (Amended) The system of claim 63, wherein the [initiating means] hand-held computing device further comprises an infrared interface communication device.

65. (Amended) The system of claim 63, wherein the [initiating means] hand-held computing device further comprises a wireless interface communication device.

66. (Amended) The system of claim 63, wherein the [initiating means] hand-held computing device further comprises a radio frequency interface communication device.

Cancel claims 67 and 68, without prejudice.

69. (Amended) The system of claim [68] 63, wherein the self-service transaction terminal comprises an automated teller machine.

70. (Amended) The system of claim [68] 63, wherein the self-service transaction terminal comprises a personal computer.

71. (Amended) The system of claim [68] 63, wherein the self-service transaction terminal comprises a telephone.

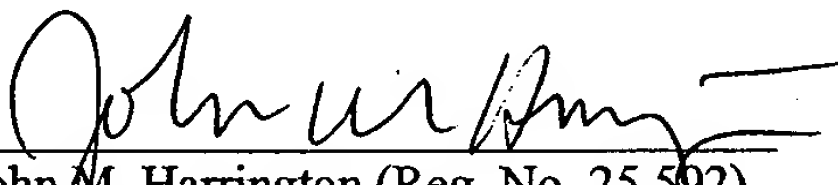
73. (Amended) The system of claim 63, wherein the [communicating means] hand-held computing device comprises a personal data assistant.

Cancel claims 75-78, without prejudice.

Conclusion

In view of the foregoing amendment and these remarks, each of the claims remaining in the application is in condition for immediate allowance. Accordingly, the examiner is requested to reconsider and withdraw the rejection and to pass the application to issue. The examiner is respectfully invited to telephone the undersigned at (336) 607-7318 to discuss any questions relating to the application.

Respectfully submitted,


John M. Harrington (Reg. No. 25,502)
for George T. Marcou (Reg. No. 33,014)

Kilpatrick Stockton LLP
607 14th Street, NW, Suite 900
Washington, DC 20005
(202) 508-5800

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